The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC7724

Sampling Date: 07/07/23

Report to:

AECOM, Inc
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Denver, CO 80237
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ATTN: Katie Abbott

Total number of pages in report: 48

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

Sections: 1 2 3 4 5 6

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Sample Summary

AECOM, INC.

Job No: FC7724

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FC7724-1	07/07/23	09:30	NH	07/12/23	AQ	Ground Water	AF-RHMW12A-WGN01LF-2307
FC7724-2	07/07/23	09:30	NH	07/12/23	AQ	Ground Water	AF-RHMW12A-WGFD01LF-2307
FC7724-3	07/07/23	10:35	AG	07/12/23	AQ	Ground Water	AF-RHMW17-WGN01LF-2307
FC7724-4	07/07/23	12:55	NH	07/12/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2307
FC7724-5	07/07/23	14:55	AG	07/12/23	AQ	Ground Water	AF-RHMW17D-WGN01LF-2307
FC7724-6	07/07/23	14:00	AG	07/12/23	AQ	Field Blank Water	AF-RHMW17D-WQFB01-2307

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC7724

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 7/27/2023 3:24:05 PM

On 07/12/2023, 5 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC7724 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ **Batch ID:** OP97911

Sample(s) FC7258-1MS, FC7258-2DUP were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluoroheptanesulfonic acid, Perfluorohexanesulfonic acid, Perfluorooctanesulfonic acid are outside control limits. Outside control limits due to high level in sample relative to spike amount.

RPD(s) for Duplicate for Perfluoroheptanesulfonic acid, Perfluorononanesulfonic acid, Perfluorooctanesulfonic acid are outside control limits for sample OP97911-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FC7724-5 have surrogates outside control limits.

OP97911-MS for 13C2-4:2FTS: Outside control limits.

OP97911-MS for 13C2-6:2FTS: Outside control limits.

OP97911-MS for 13C3-PFBS: Outside control limits.

FC7724-5 for 13C2-4:2FTS: Outside control limits.

FC7724-5 for 13C4-PFBA: Outside control limits.

FC7724-5 for d3-MeFOSAA: Outside control limits.

FC7724-5 for d5-EtFOSAA: Outside control limits.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC7724
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/07/23

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC7724-1	**AF-RHMW12A-WGN01LF-2307**					
Perfluoropentanoic acid		2.0 J	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		0.66 J	3.6	1.8	ng/l	EPA DRAFT 1633
FC7724-2	**AF-RHMW12A-WGFD01LF-2307**					
Perfluoropentanoic acid		1.7 J	7.4	1.9	ng/l	EPA DRAFT 1633
FC7724-3	**AF-RHMW17-WGN01LF-2307**					
Perfluoropentanoic acid		1.9 J	7.3	1.8	ng/l	EPA DRAFT 1633
Perfluorohexanoic acid		1.1 J	3.6	1.8	ng/l	EPA DRAFT 1633
FC7724-4	**AF-RHMW16-WGN01LF-2307**					
No hits reported in this sample.						
FC7724-5	**AF-RHMW17D-WGN01LF-2307**					
No hits reported in this sample.						
FC7724-6	**AF-RHMW17D-WQFB01-2307**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: AF-RHMW12A-WGN01LF-2307
Lab Sample ID: FC7724-1 **Date Sampled:** 07/07/23
Matrix: AQ - Ground Water **Date Received:** 07/12/23
Method: EPA DRAFT 1633 EPA 1633 DRAFT **Percent Solids:** n/a
Project: N6274223F0104 RH Fire Suppression System

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47577.D	1	07/19/23 15:41	AL	07/18/23 12:45	OP97911	S4Q697
Run #2							

	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	2.0	7.3	1.8	0.85	ng/l	J
307-24-4	Perfluorohexanoic acid	0.66	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2307		
Lab Sample ID:	FC7724-1	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		20-150%
	13C5-PFPeA	140%		20-150%
	13C5-PFHxA	122%		20-150%
	13C4-PFHpA	121%		20-150%
	13C8-PFOA	119%		20-150%
	13C9-PFNA	121%		20-150%
	13C6-PFDA	121%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	95%		20-150%
	13C2-PFTeDA	83%		20-150%
	13C3-PFBS	127%		20-150%
	13C3-PFHxS	123%		20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGN01LF-2307		
Lab Sample ID:	FC7724-1	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	126%		20-150%
	13C8-FOSA	120%		20-150%
	d3-MeFOSA	108%		20-150%
	d5-EtFOSA	111%		20-150%
	d3-MeFOSAA	113%		20-150%
	d5-EtFOSAA	110%		20-150%
	d7-MeFOSE	95%		20-150%
	d9-EtFOSE	101%		20-150%
	13C2-4:2FTS	139%		20-180%
	13C2-6:2FTS	116%		20-180%
	13C2-8:2FTS	104%		20-180%
	13C3-HFPO-DA	109%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AF-RHMW12A-WGFD01LF-2307
Lab Sample ID: FC7724-2 **Date Sampled:** 07/07/23
Matrix: AQ - Ground Water **Date Received:** 07/12/23
Method: EPA DRAFT 1633 EPA 1633 DRAFT **Percent Solids:** n/a
Project: N6274223F0104 RH Fire Suppression System

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47578.D	1	07/19/23 15:55	AL	07/18/23 12:45	OP97911	S4Q697
Run #2							

	Initial Volume	Final Volume
Run #1	540 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.7 U	15	3.7	1.8	ng/l	
2706-90-3	Perfluoropentanoic acid	1.7	7.4	1.9	0.87	ng/l	J
307-24-4	Perfluorohexanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
375-85-9	Perfluoroheptanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
335-67-1	Perfluorooctanoic acid	0.93 U	3.7	0.93	0.46	ng/l	
375-95-1	Perfluorononanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
335-76-2	Perfluorodecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
307-55-1	Perfluorododecanoic acid	1.9 U	3.7	1.9	0.56	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.9 U	3.7	1.9	0.78	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.9 U	3.7	1.9	0.46	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.7 U	4.6	3.7	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.9 U	3.7	1.9	0.65	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.9 U	3.7	1.9	0.46	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.9 U	3.7	1.9	0.50	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.9 U	3.7	1.9	0.53	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.9 U	3.7	1.9	0.59	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.7 U	4.6	3.7	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.0	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.4 U	19	7.4	3.8	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.9 U	3.7	1.9	0.62	ng/l	
31506-32-8	MeFOSA	3.7 U	7.4	3.7	0.93	ng/l	
4151-50-2	EtFOSA	3.7 U	7.4	3.7	0.93	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2307		
Lab Sample ID:	FC7724-2	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.7 U	4.6	3.7	0.93	ng/l	
2991-50-6	EtFOSAA	3.7 U	4.6	3.7	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	19 U	37	19	4.1	ng/l	
1691-99-2	EtFOSE	19 U	37	19	6.9	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.9 U	3.7	1.9	0.93	ng/l	
919005-14-4	ADONA	3.7 U	7.4	3.7	1.7	ng/l	
377-73-1	PFMPA	1.9 U	7.4	1.9	0.93	ng/l	
863090-89-5	PFMBA	3.7 U	7.4	3.7	1.1	ng/l	
151772-58-6	NFDHA	3.7 U	7.4	3.7	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.7 U	7.4	3.7	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.7 U	7.4	3.7	1.6	ng/l	
113507-82-7	PFEESA	1.9 U	7.4	1.9	0.72	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.3 U	19	9.3	4.2	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	19 U	93	19	8.1	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	19 U	93	19	7.3	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		20-150%
	13C5-PFPeA	138%		20-150%
	13C5-PFHxA	120%		20-150%
	13C4-PFHpA	118%		20-150%
	13C8-PFOA	123%		20-150%
	13C9-PFNA	119%		20-150%
	13C6-PFDA	121%		20-150%
	13C7-PFUnDA	114%		20-150%
	13C2-PFDoDA	107%		20-150%
	13C2-PFTeDA	95%		20-150%
	13C3-PFBS	126%		20-150%
	13C3-PFHxS	117%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW12A-WGFD01LF-2307		
Lab Sample ID:	FC7724-2	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	124%		20-150%
	13C8-FOSA	116%		20-150%
	d3-MeFOSA	118%		20-150%
	d5-EtFOSA	119%		20-150%
	d3-MeFOSAA	119%		20-150%
	d5-EtFOSAA	111%		20-150%
	d7-MeFOSE	101%		20-150%
	d9-EtFOSE	112%		20-150%
	13C2-4:2FTS	117%		20-180%
	13C2-6:2FTS	112%		20-180%
	13C2-8:2FTS	107%		20-180%
	13C3-HFPO-DA	112%		20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AF-RHMW17-WGN01LF-2307
Lab Sample ID: FC7724-3
Matrix: AQ - Ground Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 07/07/23
Date Received: 07/12/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47579.D	1	07/19/23 16:10	AL	07/18/23 12:45	OP97911	S4Q697
Run #2							

	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.9	7.3	1.8	0.85	ng/l	J
307-24-4	Perfluorohexanoic acid	1.1	3.6	1.8	0.45	ng/l	J
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2307		
Lab Sample ID:	FC7724-3	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	116%		20-150%
	13C5-PFPeA	146%		20-150%
	13C5-PFHxA	131%		20-150%
	13C4-PFHpA	125%		20-150%
	13C8-PFOA	128%		20-150%
	13C9-PFNA	117%		20-150%
	13C6-PFDA	121%		20-150%
	13C7-PFUnDA	99%		20-150%
	13C2-PFDoDA	94%		20-150%
	13C2-PFTeDA	81%		20-150%
	13C3-PFBS	137%		20-150%
	13C3-PFHxS	126%		20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17-WGN01LF-2307		
Lab Sample ID:	FC7724-3	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	114%		20-150%
	13C8-FOSA	112%		20-150%
	d3-MeFOSA	98%		20-150%
	d5-EtFOSA	103%		20-150%
	d3-MeFOSAA	105%		20-150%
	d5-EtFOSAA	97%		20-150%
	d7-MeFOSE	87%		20-150%
	d9-EtFOSE	93%		20-150%
	13C2-4:2FTS	125%		20-180%
	13C2-6:2FTS	112%		20-180%
	13C2-8:2FTS	107%		20-180%
	13C3-HFPO-DA	118%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AF-RHMW16-WGN01LF-2307
Lab Sample ID: FC7724-4 **Date Sampled:** 07/07/23
Matrix: AQ - Ground Water **Date Received:** 07/12/23
Method: EPA DRAFT 1633 EPA 1633 DRAFT **Percent Solids:** n/a
Project: N6274223F0104 RH Fire Suppression System

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47580.D	1	07/19/23 16:25	AL	07/18/23 12:45	OP97911	S4Q697
Run #2							

	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2307		
Lab Sample ID:	FC7724-4	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		20-150%
	13C5-PFPeA	140%		20-150%
	13C5-PFHxA	123%		20-150%
	13C4-PFHpA	123%		20-150%
	13C8-PFOA	124%		20-150%
	13C9-PFNA	122%		20-150%
	13C6-PFDA	119%		20-150%
	13C7-PFUnDA	101%		20-150%
	13C2-PFDoDA	96%		20-150%
	13C2-PFTeDA	84%		20-150%
	13C3-PFBS	126%		20-150%
	13C3-PFHxS	119%		20-150%

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2307		
Lab Sample ID:	FC7724-4	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	125%		20-150%
	13C8-FOSA	125%		20-150%
	d3-MeFOSA	109%		20-150%
	d5-EtFOSA	116%		20-150%
	d3-MeFOSAA	112%		20-150%
	d5-EtFOSAA	107%		20-150%
	d7-MeFOSE	104%		20-150%
	d9-EtFOSE	108%		20-150%
	13C2-4:2FTS	111%		20-180%
	13C2-6:2FTS	122%		20-180%
	13C2-8:2FTS	105%		20-180%
	13C3-HFPO-DA	116%		20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2307		
Lab Sample ID:	FC7724-5	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47581.D	1	07/19/23 16:40	AL	07/18/23 12:45	OP97911	S4Q697
Run #2	4Q47584.D	1	07/19/23 17:24	AL	07/18/23 12:45	OP97911	S4Q697

	Initial Volume	Final Volume
Run #1	560 ml	5.0 ml
Run #2	65.0 ml	5.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	31 U [a]	120	31	15	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.1	1.8	0.84	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.89 U	3.6	0.89	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.54	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.75	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.62	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.48	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.51	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.57	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	62 U [a]	150	62	25	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.1	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.1 U	18	7.1	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.60	ng/l	
31506-32-8	MeFOSA	3.6 U	7.1	3.6	0.89	ng/l	
4151-50-2	EtFOSA	3.6 U	7.1	3.6	0.89	ng/l	

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Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2307		
Lab Sample ID:	FC7724-5	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	31 U [a]	38	31	7.7	ng/l	
2991-50-6	EtFOSAA	31 U [a]	38	31	10	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	36	18	3.9	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.6	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.89	ng/l	
919005-14-4	ADONA	3.6 U	7.1	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.1	1.8	0.89	ng/l	
863090-89-5	PFMBA	3.6 U	7.1	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.1	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.1	3.6	1.2	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.1	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.1	1.8	0.70	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	8.9 U	18	8.9	4.0	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	89	18	7.8	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	89	18	7.0	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	5% [b]	113%	20-150%
	13C5-PFPeA	32%	127%	20-150%
	13C5-PFHxA	109%	118%	20-150%
	13C4-PFHpA	124%	112%	20-150%
	13C8-PFOA	125%	120%	20-150%
	13C9-PFNA	120%	116%	20-150%
	13C6-PFDA	120%	109%	20-150%
	13C7-PFUnDA	108%	96%	20-150%
	13C2-PFDoDA	100%	90%	20-150%
	13C2-PFTeDA	66%	72%	20-150%
	13C3-PFBS	115%	127%	20-150%
	13C3-PFHxS	113%	130%	20-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17D-WGN01LF-2307		
Lab Sample ID:	FC7724-5	**Date Sampled:**	07/07/23
Matrix:	AQ - Ground Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	121%	116%	20-150%
	13C8-FOSA	122%	94%	20-150%
	d3-MeFOSA	120%	92%	20-150%
	d5-EtFOSA	127%	106%	20-150%
	d3-MeFOSAA	183% [b]	122%	20-150%
	d5-EtFOSAA	193% [b]	117%	20-150%
	d7-MeFOSE	90%	78%	20-150%
	d9-EtFOSE	99%	88%	20-150%
	13C2-4:2FTS	222% [b]	124%	20-180%
	13C2-6:2FTS	142%	112%	20-180%
	13C2-8:2FTS	157%	108%	20-180%
	13C3-HFPO-DA	88%	106%	20-150%

(a) Result is from Run# 2

(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value

LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AF-RHMW17D-WQFB01-2307
Lab Sample ID: FC7724-6
Matrix: AQ - Field Blank Water
Method: EPA DRAFT 1633 EPA 1633 DRAFT
Project: N6274223F0104 RH Fire Suppression System

Date Sampled: 07/07/23
Date Received: 07/12/23
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q47582.D	1	07/19/23 16:54	AL	07/18/23 12:45	OP97911	S4Q697
Run #2							

	Initial Volume	Final Volume
Run #1	510 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.9 U	16	3.9	1.9	ng/l	
2706-90-3	Perfluoropentanoic acid	2.0 U	7.8	2.0	0.92	ng/l	
307-24-4	Perfluorohexanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
375-85-9	Perfluoroheptanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
335-67-1	Perfluorooctanoic acid	0.98 U	3.9	0.98	0.49	ng/l	
375-95-1	Perfluorononanoic acid	2.0 U	3.9	2.0	0.60	ng/l	
335-76-2	Perfluorodecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
2058-94-8	Perfluoroundecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
307-55-1	Perfluorododecanoic acid	2.0 U	3.9	2.0	0.59	ng/l	
72629-94-8	Perfluorotridecanoic acid	2.0 U	3.9	2.0	0.82	ng/l	
376-06-7	Perfluorotetradecanoic acid	2.0 U	3.9	2.0	0.49	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.9 U	4.9	3.9	1.1	ng/l	
355-46-4	Perfluorohexanesulfonic acid	2.0 U	3.9	2.0	0.69	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	2.0 U	3.9	2.0	0.49	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.0 U	3.9	2.0	0.53	ng/l	
68259-12-1	Perfluorononanesulfonic acid	2.0 U	3.9	2.0	0.56	ng/l	
335-77-3	Perfluorodecanesulfonic acid	2.0 U	3.9	2.0	0.63	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.9 U	4.9	3.9	1.1	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.2	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.8 U	20	7.8	3.4	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.8 U	20	7.8	4.0	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	2.0 U	3.9	2.0	0.66	ng/l	
31506-32-8	MeFOSA	3.9 U	7.8	3.9	0.98	ng/l	
4151-50-2	EtFOSA	3.9 U	7.8	3.9	0.98	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2307		
Lab Sample ID:	FC7724-6	**Date Sampled:**	07/07/23
Matrix:	AQ - Field Blank Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.9 U	4.9	3.9	0.98	ng/l	
2991-50-6	EtFOSAA	3.9 U	4.9	3.9	1.3	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	20 U	39	20	4.3	ng/l	
1691-99-2	EtFOSE	20 U	39	20	7.3	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	2.0 U	3.9	2.0	0.98	ng/l	
919005-14-4	ADONA	3.9 U	7.8	3.9	1.8	ng/l	
377-73-1	PFMPA	2.0 U	7.8	2.0	0.98	ng/l	
863090-89-5	PFMBA	3.9 U	7.8	3.9	1.1	ng/l	
151772-58-6	NFDHA	3.9 U	7.8	3.9	1.2	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.9 U	7.8	3.9	1.4	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.9 U	7.8	3.9	1.7	ng/l	
113507-82-7	PFEESA	2.0 U	7.8	2.0	0.76	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.8 U	20	9.8	4.4	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	20 U	98	20	8.6	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	20 U	98	20	7.7	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	129%		20-150%
	13C5-PFPeA	145%		20-150%
	13C5-PFHxA	130%		20-150%
	13C4-PFHpA	127%		20-150%
	13C8-PFOA	127%		20-150%
	13C9-PFNA	123%		20-150%
	13C6-PFDA	117%		20-150%
	13C7-PFUnDA	109%		20-150%
	13C2-PFDoDA	100%		20-150%
	13C2-PFTeDA	51%		20-150%
	13C3-PFBS	131%		20-150%
	13C3-PFHxS	118%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW17D-WQFB01-2307		
Lab Sample ID:	FC7724-6	**Date Sampled:**	07/07/23
Matrix:	AQ - Field Blank Water	**Date Received:**	07/12/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	132%		20-150%
	13C8-FOSA	112%		20-150%
	d3-MeFOSA	116%		20-150%
	d5-EtFOSA	123%		20-150%
	d3-MeFOSAA	129%		20-150%
	d5-EtFOSAA	126%		20-150%
	d7-MeFOSE	101%		20-150%
	d9-EtFOSE	112%		20-150%
	13C2-4:2FTS	118%		20-180%
	13C2-6:2FTS	131%		20-180%
	13C2-8:2FTS	102%		20-180%
	13C3-HFPO-DA	117%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando
Chain of Custody

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COC #: 2307AFSG05
PAGE 1 OF 1

SGS - ORLANDO JOB # :
SGS - ORLANDO Quote #
SKIFF # FC7724

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu **State:** HI **Zip:** 96813
Project Contact: Katie Abbott **Email:** katie.abbott@aecom.com
Project Manager: Watson Tanji **Email:** watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: Nate Hayter **Sampler 2:** Cristian Perez

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu **State** Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	MeOH-ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW12A-WGN01LF-2307	7/7/23	0930	NN	GW	3		X								X	
2	AF-RHMW12A-WGFD01LF-2307	7/7/23	0930	NN	GW	3		X								X	

NN 7/7/23

Turnaround Time (Business days)

- 10 Day (Business) — Approved By: / Date:
- 7 Day
- [5 Day]
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

INITIAL ASSESSMENT
LABEL VERIFICATION 7/10/23

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		7/7/23 1400	2 Hunter Nicholson AECOM	3 Hunter Nicholson	7/10/23 1340	4 Fed Ex
5	Fed Ex	Date Time:	6 07/12/23 0930	7	Date Time:	8

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5.2
FR #1

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COC #: 2307AFSG10
PAGE 1 OF 1

SGS - ORLANDO JOB # : FC7724
SGS - ORLANDO Quote #
SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: Gavin Murao Sampler 2: Mark Muraoka

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

PFAS EPA Draft 1633

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
3	AF-RHMW17-WGN01LF-2307	7/7/23	1035	DA GM MM	GW	3		X								X	

Turnaround Time (Business days)

- 10 Day (Business) Approved By: / Date:
- 7 Day
- [5 Day]
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [x] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Angeles Gerardo /AECOM	7/7/23/1410	2 Hunter Nishimoto /AECOM	3 Hunter Nishimoto /AECOM	7/10/23 1330	4 0930 07/12/23
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		8

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Chain of Custody

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COC #: 2307AFSG06
PAGE 1 OF 1

SGS - ORLANDO JOB # : FC7724
SGS - ORLANDO Quote #
SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: Nate Hogle Sampler 2: Cristina Perez

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 60697810
Fax #
Client Purchase Order #

Analytical Information

PFAS EPA Draft 1633

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	D. WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
4	AF-RHMW16-WGN01LF-2307	7/7/23	1255	NN	GW	3		X								X	

NN 7/7/23

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

[ ] COMMERCIAL "A" (RESULTS ONLY)
[ ] COMMERCIAL "B" (RESULTS PLUS QC)
[ ] REDT1 (EPA LEVEL 3)
[x] FULLT1 (EPA LEVEL 4)
[x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	NH / AECOM	7/7/23 1400	2 Clara Un / AECOM	3 relinquished for clara Un by Alex Edwards	7/10/23 1330	4 07/12/23 0930
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

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FC7724: Chain of Custody
Page 3 of 5

SGS North America Inc - Orlando
Chain of Custody

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COC #: 2307AFSG11
PAGE 1 OF 1
SGS - ORLANDO JOB # :
SGS - ORLANDO Quote #
SKIFF # FC7724

Client / Reporting Information		Project Information		Analytical Information	Matrix Codes
Company Name: AECOM		Project Name: N6274223F0104 RH Fire Suppression System			DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL- Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe
Address: 1001 Bishop St. ste 1600		Street			
City: Honolulu	State: HI Zip: 96813	City Honolulu	State Hawaii		
Project Contact: Katie Abbott	Email: katie.abbott@aecom.com	Project # 60697810			
Project Manager: Watson Tanji	Email: watson.tanji@aecom.com				
Phone #: 303-796-4624 / 808-954-4512		Fax #			
Sampler(s) Name(s) (Printed) Sampler 1: Douglas Crooks Sampler 2: Gavin Nuuhi		Client Purchase Order #			

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
5	AF-RHMW17D-WGN01LF-2307	7/7/23	1455	DG MM GN	GW	3		X								X	
6	AF-RHMW17D-WQFB01-2307	7/7/23	1400	DG MM GN	GW	3		X								X	

AM 7/7/23

AM 7/7/23

Turnaround Time (Business days)	Approved By: / Date:	Data Deliverable Information	Comments / Remarks
10 Day (Business)		[ ] COMMERCIAL "A" (RESULTS ONLY)	EDMS upload database: JBPHE
7 Day		[ ] COMMERCIAL "B" (RESULTS PLUS QC)	EDMS Coverage: AFFF Assessment Sampling GW
[5 Day]		[ ] REDT1 (EPA LEVEL 3)	
3 Day *RUSH*		[x] FULLT1 (EPA LEVEL 4)	
2 Day *RUSH*		[x] EDD'S	
1 Day *RUSH*			
Other			
Rush T/A Data Available VIA Email or Lablink			

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Douglas Crooks/AECOM	7/7/23 1550	2 Hunter Nishikawa AECOM	3 Hunter Nishikawa AECOM	7/10/23 1320	4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		07/12/23 0930

Lab Use Only : Cooler Temperature (s) Celsius (corrected): _____

http://www.sgs.com/en/terms-and-conditions

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FC7724: Chain of Custody
Page 4 of 5

SGS Sample Receipt Summary

Job Number: FC7724 **Client:** AECOM **Project:** N6274223F0104 RH Fire Suppression System

Date / Time Received: 7/12/2023 9:30:00 AM **Delivery Method:** FedEx **Airbill #'s:** 780948422067

Therm ID: IR 1; **Therm CF:** -0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (5.2);

Cooler Temps (Corrected) °C: Cooler 1: (5.0);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230320 pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 7/12/2023 9:30:00 AM Reviewer: SP Date: 7/17/2023

QC Evaluation: DOD QSM5.x Limits

Job Number: FC7724
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 07/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC7724

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q697-IBLK	4Q47561.D	1	07/19/23	AL	n/a	n/a	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	0.0011	0.0080	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q697-IBLK	4Q47561.D	1	07/19/23	AL	n/a	n/a	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	99%	20-150%
	13C5-PFPeA	121%	20-150%
	13C5-PFHxA	101%	20-150%
	13C4-PFHpA	103%	20-150%
	13C8-PFOA	103%	20-150%
	13C9-PFNA	106%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	95%	20-150%
	13C2-PFDoDA	97%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	110%	20-150%
	13C3-PFHxS	105%	20-150%
	13C8-PFOS	113%	20-150%
	13C8-FOSA	115%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	104%	20-150%
	13C2-4:2FTS	132%	20-180%
	13C2-6:2FTS	122%	20-180%
	13C2-8:2FTS	117%	20-180%

Continuing Calibration Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q697-ICCB	4Q47575.D	1	07/19/23	AL	n/a	n/a	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q697-ICCB	4Q47575.D	1	07/19/23	AL	n/a	n/a	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	99%	20-150%
	13C5-PFPeA	119%	20-150%
	13C5-PFHxA	97%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	106%	20-150%
	13C9-PFNA	99%	20-150%
	13C6-PFDA	100%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	95%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	107%	20-150%
	13C3-PFHxS	97%	20-150%
	13C8-PFOS	115%	20-150%
	13C8-FOSA	118%	20-150%
	d3-MeFOSAA	116%	20-150%
	d5-EtFOSAA	109%	20-150%
	13C2-4:2FTS	118%	20-180%
	13C2-6:2FTS	95%	20-180%
	13C2-8:2FTS	114%	20-180%

Method Blank Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-MB	4Q47566.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-MB	4Q47566.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	124%	20-150%
	13C5-PFPeA	144%	20-150%
	13C5-PFHxA	127%	20-150%
	13C4-PFHpA	127%	20-150%
	13C8-PFOA	125%	20-150%
	13C9-PFNA	130%	20-150%
	13C6-PFDA	126%	20-150%
	13C7-PFUnDA	114%	20-150%
	13C2-PFDoDA	115%	20-150%
	13C2-PFTeDA	107%	20-150%
	13C3-PFBS	130%	20-150%
	13C3-PFHxS	124%	20-150%
	13C8-PFOS	136%	20-150%
	13C8-FOSA	101%	20-150%
	d3-MeFOSA	97%	20-150%
	d5-EtFOSA	113%	20-150%
	d3-MeFOSAA	132%	20-150%
	d5-EtFOSAA	125%	20-150%
	d7-MeFOSE	91%	20-150%
	d9-EtFOSE	110%	20-150%
	13C2-4:2FTS	137%	20-180%
	13C2-6:2FTS	169%	20-180%
	13C2-8:2FTS	139%	20-180%
	13C3-HFPO-DA	118%	20-150%

Instrument Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q699-IBLK	4Q47713.D	1	07/21/23	AL	n/a	n/a	S4Q699

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

OP97911-DUP, OP97911-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	0.0017	0.0080	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0037	0.0080	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	0.0076	0.040	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q699-IBLK	4Q47713.D	1	07/21/23	AL	n/a	n/a	S4Q699

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

OP97911-DUP, OP97911-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	105%	20-150%
	13C5-PFPeA	94%	20-150%
	13C5-PFHxA	98%	20-150%
	13C4-PFHpA	97%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	96%	20-150%
	13C6-PFDA	103%	20-150%
	13C7-PFUnDA	100%	20-150%
	13C2-PFDoDA	101%	20-150%
	13C2-PFTeDA	91%	20-150%
	13C3-PFBS	98%	20-150%
	13C3-PFHxS	98%	20-150%
	13C8-PFOS	100%	20-150%
	13C8-FOSA	107%	20-150%
	d3-MeFOSAA	99%	20-150%
	d5-EtFOSAA	104%	20-150%
	13C2-4:2FTS	121%	20-180%
	13C2-6:2FTS	114%	20-180%
	13C2-8:2FTS	110%	20-180%

Blank Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-LLBS	4Q47565.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0254	85	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0112	75	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0062	83	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0058	77	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0063	84	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0064	85	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0064	85	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0065	87	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0062	83	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0060	80	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0059	79	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0050	75	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0060	85	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0052	76	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0064	90	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0066	95	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0055	76	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0056	77	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0055	76	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0243	86	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0233	82	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0251	87	40-150
754-91-6	PFOSA	0.0075	0.0062	83	40-150
31506-32-8	MeFOSA	0.015	0.0126	84	40-150
4151-50-2	EtFOSA	0.015	0.0115	77	40-150
2355-31-9	MeFOSAA	0.0075	0.0058	77	40-150
2991-50-6	EtFOSAA	0.0075	0.0070	93	40-150
24448-09-7	MeFOSE	0.0375	0.0330	88	40-150
1691-99-2	EtFOSE	0.0375	0.0266	71	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0126	84	40-150
919005-14-4	ADONA	0.0142	0.0113	80	40-150
377-73-1	PFMPA	0.015	0.0113	75	40-150
863090-89-5	PFMBA	0.015	0.0110	73	40-150
151772-58-6	NFDHA	0.015	0.0135	90	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0120	86	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0111	78	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-LLBS	4Q47565.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0110	82	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0252	67	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.132	70	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.142	76	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	119%	20-150%
	13C5-PFPeA	142%	20-150%
	13C5-PFHxA	124%	20-150%
	13C4-PFHpA	125%	20-150%
	13C8-PFOA	129%	20-150%
	13C9-PFNA	120%	20-150%
	13C6-PFDA	121%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	105%	20-150%
	13C2-PFTeDA	101%	20-150%
	13C3-PFBS	126%	20-150%
	13C3-PFHxS	119%	20-150%
	13C8-PFOS	120%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSA	89%	20-150%
	d5-EtFOSA	103%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	110%	20-150%
	d7-MeFOSE	89%	20-150%
	d9-EtFOSE	105%	20-150%
	13C2-4:2FTS	129%	20-180%
	13C2-6:2FTS	143%	20-180%
	13C2-8:2FTS	130%	20-180%
	13C3-HFPO-DA	116%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-BS	4Q47564.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.0920	92	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0405	81	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0229	92	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0221	88	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0218	87	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0237	95	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0219	88	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0242	97	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0241	96	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0226	90	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0227	91	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0192	87	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0200	85	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0171	75	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0228	96	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0208	90	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0219	91	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0224	93	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0191	79	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.0892	95	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0821	86	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.107	111	40-150
754-91-6	PFOSA	0.025	0.0223	89	40-150
31506-32-8	MeFOSA	0.05	0.0494	99	40-150
4151-50-2	EtFOSA	0.05	0.0413	83	40-150
2355-31-9	MeFOSAA	0.025	0.0228	91	40-150
2991-50-6	EtFOSAA	0.025	0.0257	103	40-150
24448-09-7	MeFOSE	0.125	0.116	93	40-150
1691-99-2	EtFOSE	0.125	0.0999	80	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0472	94	40-150
919005-14-4	ADONA	0.0473	0.0426	90	40-150
377-73-1	PFMPA	0.05	0.0403	81	40-150
863090-89-5	PFMBA	0.05	0.0393	79	40-150
151772-58-6	NFDHA	0.05	0.0499	100	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0449	96	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0411	87	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-BS	4Q47564.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0414	93	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.0938	75	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.497	80	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.523	84	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	112%	20-150%
	13C5-PFPeA	136%	20-150%
	13C5-PFHxA	115%	20-150%
	13C4-PFHpA	119%	20-150%
	13C8-PFOA	121%	20-150%
	13C9-PFNA	115%	20-150%
	13C6-PFDA	113%	20-150%
	13C7-PFUnDA	108%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	95%	20-150%
	13C3-PFBS	113%	20-150%
	13C3-PFHxS	112%	20-150%
	13C8-PFOS	116%	20-150%
	13C8-FOSA	95%	20-150%
	d3-MeFOSA	82%	20-150%
	d5-EtFOSA	97%	20-150%
	d3-MeFOSAA	116%	20-150%
	d5-EtFOSAA	111%	20-150%
	d7-MeFOSE	89%	20-150%
	d9-EtFOSE	103%	20-150%
	13C2-4:2FTS	127%	20-180%
	13C2-6:2FTS	133%	20-180%
	13C2-8:2FTS	107%	20-180%
	13C3-HFPO-DA	109%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-MS	4Q47717.D	5	07/21/23	AL	07/18/23	OP97911	S4Q699
FC7258-1	4Q47569.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697
FC7258-1	4Q47716.D	5	07/21/23	AL	07/18/23	OP97911	S4Q699

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	FC7258-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0164		0.0909	0.0992	91	40-150
2706-90-3	Perfluoropentanoic acid	0.0153		0.0455	0.0576	93	40-150
307-24-4	Perfluorohexanoic acid	0.110		0.0227	0.124	62	40-150
375-85-9	Perfluoroheptanoic acid	0.0167		0.0227	0.0352	81	40-150
335-67-1	Perfluorooctanoic acid	0.117		0.0227	0.149	141	40-150
375-95-1	Perfluorononanoic acid	0.0071		0.0227	0.0243	76	40-150
335-76-2	Perfluorodecanoic acid	0.0037	U	0.0227	0.0200	88	40-150
2058-94-8	Perfluoroundecanoic acid	0.0037	U	0.0227	0.0206	91	40-150
307-55-1	Perfluorododecanoic acid	0.0037	U	0.0227	0.0242	106	40-150
72629-94-8	Perfluorotridecanoic acid	0.0037	U	0.0227	0.0210	92	40-150
376-06-7	Perfluorotetradecanoic acid	0.0037	U	0.0227	0.0223	98	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0354		0.0202	0.0537	91	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0635		0.0214	0.0729	44	40-150
355-46-4	Perfluorohexanesulfonic acid	1.80	b	0.0208	2.06	1252*	a 40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0556		0.0217	0.0524	-15*	a 40-150
1763-23-1	Perfluorooctanesulfonic acid	1.86	b	0.0211	1.97	522*	a 40-150
68259-12-1	Perfluorononanesulfonic acid	0.0037	U	0.0219	0.0170	78	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0037	U	0.0219	0.0157	72	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0046	U	0.022	0.0143	65	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.019	U	0.0852	0.0658	77	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019	U	0.0864	0.0640	74	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	0.0873	0.0790	91	40-150
754-91-6	PFOSA	0.0352	b	0.0227	0.0591	105	40-150
31506-32-8	MeFOSA	0.0074	U	0.0455	0.0481	106	40-150
4151-50-2	EtFOSA	0.037	U b	0.0455	0.0433	95	40-150
2355-31-9	MeFOSAA	0.0046	U	0.0227	0.0255	112	40-150
2991-50-6	EtFOSAA	0.0046	U	0.0227	0.0230	101	40-150
24448-09-7	MeFOSE	0.037	U	0.114	0.114	100	40-150
1691-99-2	EtFOSE	0.037	U	0.114	0.102	90	40-150
13252-13-6	HFPO-DA (GenX)	0.0037	U	0.0455	0.0364	80	40-150
919005-14-4	ADONA	0.0074	U	0.043	0.0417	97	40-150
377-73-1	PFMPA	0.0074	U	0.0455	0.0398	88	40-150
863090-89-5	PFMBA	0.0074	U	0.0455	0.0406	89	40-150
151772-58-6	NFDHA	0.0074	U	0.0455	0.0369	81	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0074	U	0.0425	0.0364	86	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0074	U	0.043	0.0328	76	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-MS	4Q47717.D	5	07/21/23	AL	07/18/23	OP97911	S4Q699
FC7258-1	4Q47569.D	1	07/19/23	AL	07/18/23	OP97911	S4Q697
FC7258-1	4Q47716.D	5	07/21/23	AL	07/18/23	OP97911	S4Q699

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	FC7258-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0074	U	0.0405	0.0344	85	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019	U	0.114	0.0939	83	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.093	U	0.568	0.458	81	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.093	U	0.568	0.461	81	40-150

CAS No.	ID Standard Recoveries	MS	FC7258-1	FC7258-1	Limits
	13C4-PFBA	93%	97%	96%	20-150%
	13C5-PFPeA	115%	142%	110%	20-150%
	13C5-PFHxA	120%	123%	114%	20-150%
	13C4-PFHpA	121%	125%	109%	20-150%
	13C8-PFOA	111%	124%	115%	20-150%
	13C9-PFNA	101%	109%	100%	20-150%
	13C6-PFDA	99%	109%	94%	20-150%
	13C7-PFUnDA	92%	93%	88%	20-150%
	13C2-PFDoDA	76%	94%	79%	20-150%
	13C2-PFTeDA	69%	88%	71%	20-150%
	13C3-PFBS	158%* [c]	141%	121%	20-150%
	13C3-PFHxS	122%	106%	110%	20-150%
	13C8-PFOS	107%	125%	118%	20-150%
	13C8-FOSA	93%	165%* [c]	116%	20-150%
	d3-MeFOSA	83%	141%	94%	20-150%
	d5-EtFOSA	81%	151%* [c]	92%	20-150%
	d3-MeFOSAA	91%	134%	105%	20-150%
	d5-EtFOSAA	84%	133%	97%	20-150%
	d7-MeFOSE	71%	140%	87%	20-150%
	d9-EtFOSE	83%	143%	94%	20-150%
	13C2-4:2FTS	209%* [c]	156%	130%	20-180%
	13C2-6:2FTS	203%* [c]	158%	143%	20-180%
	13C2-8:2FTS	148%	123%	124%	20-180%
	13C3-HFPO-DA	100%	112%	98%	20-150%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-DUP	4Q47719.D	10	07/21/23	AL	07/18/23	OP97911	S4Q699
FC7258-2	6Q21618.D	5	07/25/23	MV	07/18/23	OP97911	S6Q318
FC7258-2	6Q21619.D	16	07/25/23	MV	07/18/23	OP97911	S6Q318

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	FC7258-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.196		0.186		5	30
2706-90-3	Perfluoropentanoic acid	0.532		0.458		15	30
307-24-4	Perfluorohexanoic acid	2.13		1.78		18	30
375-85-9	Perfluoroheptanoic acid	0.652		0.544		18	30
335-67-1	Perfluorooctanoic acid	2.29		1.91		18	30
375-95-1	Perfluorononanoic acid	0.125		0.115		8	30
335-76-2	Perfluorodecanoic acid	0.0124	J	0.0101	J	20	30
2058-94-8	Perfluoroundecanoic acid	0.020 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.020 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.020 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.020 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.308		0.247		22	30
2706-91-4	Perfluoropentanesulfonic acid	0.405		0.309		27	30
355-46-4	Perfluorohexanesulfonic acid	7.13 [a]		7.27	E	2	30
375-92-8	Perfluoroheptanesulfonic acid	0.124		0.0694		56*	30
1763-23-1	Perfluorooctanesulfonic acid	3.62 [a]		2.59		33*	30
68259-12-1	Perfluorononanesulfonic acid	0.0139	J	ND		200*	30
335-77-3	Perfluorodecanesulfonic acid	0.020 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.026 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.10 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.10 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.10 U		ND		nc	30
754-91-6	PFOSA	0.365		0.286		24	30
31506-32-8	MeFOSA	0.041 U		ND		nc	30
4151-50-2	EtFOSA	0.041 U		ND		nc	30
2355-31-9	MeFOSAA	0.026 U		ND		nc	30
2991-50-6	EtFOSAA	0.026 U		ND		nc	30
24448-09-7	MeFOSE	0.20 U		ND		nc	30
1691-99-2	EtFOSE	0.20 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.020 U		ND		nc	30
919005-14-4	ADONA	0.041 U		ND		nc	30
377-73-1	PFMPA	0.041 U		ND		nc	30
863090-89-5	PFMBA	0.041 U		ND		nc	30
151772-58-6	NFDHA	0.041 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.041 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.041 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC7724
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP97911-DUP	4Q47719.D	10	07/21/23	AL	07/18/23	OP97911	S4Q699
FC7258-2	6Q21618.D	5	07/25/23	MV	07/18/23	OP97911	S6Q318
FC7258-2	6Q21619.D	16	07/25/23	MV	07/18/23	OP97911	S6Q318

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC7724-1, FC7724-2, FC7724-3, FC7724-4, FC7724-5, FC7724-6

CAS No.	Compound	FC7258-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.041	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.10	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.51	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.51	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC7258-2	FC7258-2	Limits
	13C4-PFBA	90%	78%	46%	20-150%
	13C5-PFPeA	109%	109%	70%	20-150%
	13C5-PFHxA	115%	107%	74%	20-150%
	13C4-PFHpA	116%	119%	75%	20-150%
	13C8-PFOA	122%	114%	82%	20-150%
	13C9-PFNA	110%	117%	82%	20-150%
	13C6-PFDA	120%	113%	89%	20-150%
	13C7-PFUnDA	102%	111%	88%	20-150%
	13C2-PFDoDA	103%	98%	67%	20-150%
	13C2-PFTeDA	78%	85%	55%	20-150%
	13C3-PFBS	117%	123%	86%	20-150%
	13C3-PFHxS	92%	100%	83%	20-150%
	13C8-PFOS	170%* [b]	121%	90%	20-150%
	13C8-FOSA	127%	100%	72%	20-150%
	d3-MeFOSA	106%	112%	72%	20-150%
	d5-EtFOSA	113%	109%	77%	20-150%
	d3-MeFOSAA	135%	137%	83%	20-150%
	d5-EtFOSAA	116%	115%	85%	20-150%
	d7-MeFOSE	98%	93%	63%	20-150%
	d9-EtFOSE	109%	96%	73%	20-150%
	13C2-4:2FTS	218%* [b]	146%	86%	20-180%
	13C2-6:2FTS	122%	136%	94%	20-180%
	13C2-8:2FTS	114%	117%	81%	20-180%
	13C3-HFPO-DA	89%	129%	77%	20-150%

(a) Result is from Run #2.
(b) Outside control limits due to dilution.

* = Outside of Control Limits.